Amendments to the Claims:

1. (Currently Amended) A protective composite sleeve material for a microwave reaction vessel, said sleeve material comprising:

a microwave-transparent circumferentially wound cylindrical layer of contiguous yarns fixed with a ~~microwave transparent structural medium.~~ first polymer layer on one surface of said wound layer; and

a chemically-inert polymeric inner liner on the opposite surface of said wound layer from said first structural polymer.

2. (Cancelled)

3. (Cancelled)

4. (Currently Amended) A composite sleeve material according to Claim ~~3~~ 1 and further comprising a chemically inert outer liner on said first structural polymer.

5. (Original) A composite sleeve material according to Claim 4 wherein said first structural polymer comprises a polyimide resin.

6. (Original) A composite sleeve material according to Claim 5 wherein said inner and outer liners are tetrafluoroethylene polymer.

7. (Original) A composite sleeve material according to Claim 4 and further comprising at least one additional textile layer and one additional structural polymer layer between said first structural polymer layer and said inert outer liner.

8. (Original) A composite sleeve material according to Claim 7 wherein said additional textile layer is selected from the group consisting of wound filaments, wound yarns, woven fabric, braided fabric, nonwoven fabric, and knitted fabric.

9. (Previously Amended) A protective composite sleeve for a microwave transparent vessel, said sleeve comprising:

a microwave transparent inner cylindrical polymeric layer;

a first microwave transparent circumferentially wound layer of contiguous yarns adjacent to and concentric with said inner polymeric layer; and

a microwave transparent outer polymeric layer.

10. (Original) A composite sleeve according to Claim 9 and further comprising a structural polymer layer between said wound layer and said outer polymeric layer.

11. (Original) A composite sleeve according to Claim 10 wherein said structural polymer layer comprises an engineering resin.

12. (Original) A composite sleeve according to Claim 11 wherein said engineering resin is a polyimide.

13. (Original) A composite sleeve according to Claim 10 further comprising a plurality of pairs of adjacent concentric layers of structural polymer and textiles between said inner and outer polymeric layers.

14. (Original) A composite sleeve according to Claim 13 wherein said textile layers in said pairs are selected from the group consisting of woven fabrics, braided fabrics, nonwoven fabrics, and knitted fabrics.

15. (Original) A composite sleeve according to Claim 13 wherein said textile layers in said pairs comprise a winding selected from the group consisting of filaments and yarns.

16. (Original) A composite sleeve according to Claim 9 wherein said inner and outer polymer layers comprise a tetrafluoroethylene polymer.

(17-35 (Cancelled))

36. (Previously Added) A protective composite sleeve material according to Claim 1 wherein said yarns are selected from the group consisting of filament and spun yarns.

37. (Previously Added) A protective composite sleeve according to Claim 9 wherein said yarns are selected from the group consisting of filament and spun yarns.

38. (New) A protective composite sleeve and vessel assembly for microwave assisted chemistry, said assembly comprising:

a sleeve formed of a microwave-transparent circumferentially wound cylindrical layer of contiguous yarns fixed with a first polymer layer on one surface of said wound layer, and a chemically-inert polymeric inner liner on the opposite surface of said wound layer from said first structural polymer; and

a microwave-transparent pressure resistant reaction cylinder surrounded by said sleeve.